

## ABSTRACT

A method and medium tangibly embodying the method of constructing a lookup table of modes for encoding data for transmission in a wireless communication channel from a transmit unit to a receive unit by using at least one quality parameter of the data and its first-order and second-order statistical parameters to arrange the modes in the lookup table. The first-order and second-order statistical parameters can be determined from a simulation of the wireless communication channel or from field measurements of the wireless communication channel. The modes in the lookup table are ordered by a target value of a communication parameter such as PER, BER, data capacity, signal quality, spectral efficiency, throughput or another suitable communication parameter set to achieve a desired quality of service. The quality parameter selected is conveniently a short-term quality parameter such as signal-to-interference and noise ratio (SINR), signal-to-noise ratio (SNR) or power level. During use adjustments depending on the instantaneous condition of the channel can be used to tune the lookup table.

15  
20  
25  
30  
35  
40  
45  
50  
55  
60  
65  
70  
75  
80  
85  
90  
95